Linnæus University

Course syllabus

Faculty Board of Science and Engineering
School of Computer Science, Physics and Mathematics

2DV102 Programvaruteknisk översiktskurs, 15 högskolepoäng
Foundations of Software Technology, 15 credits

Main field of study
Computer Science

Subject Group
Informatics/Computer and Systems Sciences

Level of classification
First Level

Progression
G2F

Date of Ratification
Approved by Organisational Committee 2009-12-15

The course syllabus is valid from autumn semester 2010

Prerequisites
120 credits of which at least 60 credits must be in Computer Science or the equivalent.

Expected learning outcomes

Upon completion of the course, the student should:

- be able to implement medium sized programs in Java
- be able to design and develop robust and reusable object-oriented software systems
- be able to define and apply formal languages concepts like finite automata, regular expressions, context-free grammars, and parsing
- be able to define and apply algorithmic theory concepts like timecomplexity, greedy algorithms, and dynamic programming
- be able to implement data structures like graphs, trees, sets, and hash tables

Content

The course covers the following topics:

- object-oriented programming in Java
- object-oriented design using UML
- data structures (linear structures, hashing, trees, graphs)
- formal languages (finite automata, regular expressions, context-free grammars, recursive descent)
- algorithm theory (time-complexity, greedy algorithms, dynamic programming)

Type of Instruction
Lectures and practical assignments.

Examination
The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).
On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

Assessment of the student´s performance is made through written exams and/or oral tests and/or presentation of compulsory practical assignments. The assessment method will be decided at the start of the course.
Students who do not pass the regular examination are given the opportunity to do a resit shortly after the regular examination.

Course Evaluation
A written course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The course evaluation will be filed at the department.

Other
Upon request, a Swedish University degree will be issued upon successful completion of the full demands for that degree.

Upon request, a Swedish University course certificate will be issued upon successful completion of the course.

Required Reading and Additional Study Material
Required reading
Relevant literature will be selected together with the supervisor and the examiner.